REMARKS

Claims 1-13 and 16-18 were pending at the time of the Office Action. Claims 14, 15, and 19-63 were previously withdrawn from consideration pursuant to a restriction requirement. Claims 11, 14, and 15 are cancelled in this response. Claims 1, 2, 12, 13, and 16-18 are amended in this response. Claims 64 and 65 are new claims. No new matter is added. Claims 1-10, 12, 13, 16-18, 64, and 65 are pending at this time. Claim 1 is an independent claim. Reconsideration and allowance of the above-referenced application are respectfully requested.

Claims Listing

Claims 14 and 15 are cancelled in this response and are listed as "Cancelled." Claims 12, 13, 16, 17, and 18 are amended in this response and listed as "Currently amended." The numbering of claims 34 and 35 are corrected.

35 USC 101

Claims 1-13 and 16-18 stand rejected under 35 USC 101 as allegedly being non-statutory. The cancellation of claim 11 obviates the rejection of this claim. The amendments to claim 1 obviate the rejections of these claims.

As amended, claim 1 recites "a processor to perform operations comprising: receiving an input signal including events of interest; performing active interferometric analysis on the received input signal using an expresser function to detect the presence of an event of interest within an arrayed signal pattern via a computationally induced interference mechanism, wherein the event of interest is processed in a different way than other events within the arrayed signal

pattern; and obtaining the event of interest from the input signal." (Emphasis added).

In this regard, the MPEP states:

> A claimed invention is directed to a practical application of a 35 U.S.C. 101 judicial exception when it:
>
> (A) "transforms" an article or physical object to a different state or thing; or
>
> (B) otherwise produces a useful, concrete and tangible result, based on the factors discussed below. (Emphasis added).

See, MPEP, 2106.III.C.2:

Thus, a claimed invention is directed to a practical application of a 35 USC 101 judicial exception when it transforms an article or physical object to a different state or thing. As recited in claim 1, the processor performs operations including receiving input signals containing events of interest, performing active interferometric analysis on the received input signal, and obtaining the event of interest from the input signal. As described in the Specification, the input signal is obtained from physical samples, e.g., a genomic biochip/microarray. See, e.g., Specification, page 11, lines 14-16. Because the processor performs active interferometric analysis on an input signal, it is inherent that the input signal undergoes a transformation. In addition, the processor identifies an event of interest in the input signal which is a concrete, tangible, and useful result. Because claim 1 recites a processor that performs operations that cause a transformation and produces a concrete, tangible, and useful result, claim 1 is statutory.

Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 USC 101 be withdrawn. Further, applicant respectfully requests that the rejection of claims 2-

10, 13-13, and 16-18 also be withdrawn at least for reasons similar to claim 1.

35 USC 102 and 35 USC 103

Claims 1, 3-6, and 8-10 stand rejected under 35 USC 102(b) as allegedly being anticipated by Cabib et al. (US 5,539,517), hereinafter "Cabib." Claims 1-13 and 16-18 stand rejected under 35 USC 103(a) as allegedly being unpatentable over Cabin in view of Garini et al. (US 5,817,462), hereinafter "Garini." The cancellation of claim 11 obviates the rejection of this claim. The rejections of claims 1-10, 12, 13, and 16-18 are respectfully traversed.

As amended, claim 1 describes a processor that performs operations including receiving an input signal that includes events of interest. The processor performs active interferometric analysis on the received input signal via a computationally induced interference mechanism. For the active interferometric analysis, the process uses an expressor function to detect the presence of an event of interest with an arrayed signal pattern, where the event of interest is processed in a different way than other events within the arrayed signal pattern. Cabib does not describe these features of claim 1.

In this regard, Cabib teaches a method of analyzing an optical image of a scene to determine the spectral intensity of each pixel of the scene. Cabib's method includes collecting incident light from the scene, passing the light through an interferometer which outputs modulated light corresponding to a predetermined set of linear combinations of the spectral intensity of the light emitted from each pixel, focusing the light outputted from the interferometer on a detector array, and processing the output of the detector array to determine the spectral intensity of each pixel. See, e.g., Cabib at Abstract.

To achieve the objective of determining the spectral intensity of each pixel, Cabib describes utilizing both moving type interferometers and non-moving type interferometers, and that the interferometer or optical path difference generator outputs modulated light corresponding to a predetermined set of linear combinations of the spectral intensity of the light emitted from each pixel of the scene to be analyzed. See, e.g., Cabib, col. 2, lines 7-13, col. 5, lines 11-15. Further, Cabib describes using, e.g., a Fabry-Perot interferometer operated using a mechanical scanner that mechanically induces interference in the received light. Because Cabib describes mechanically inducing interference, Cabib does not describe a computationally induced interference mechanism, as claimed.

Further, the Office Action contends that the equations listed in Cabib relate to inducing interference in the received light. See, e.g., Office Action, page 2, second paragraph. This contention should be reconsidered. The cited portion of Cabib (Cabib, col. 10, lines 16-60) describes equations for calculating the spectral intensity of light received by a detector which is received after the light has passed through an interferometer. In this regard, Cabib states:

> Therefore, when the collimated beams at the exit of the interferometer are focused on a detector array, such as array 36 in FIG. 3, each element of the array will receive light which underwent different OPD's between the two arms. (Emphasis added).

See, Cabib, col. 9, lines 41-44.

Thus, Cabib describes that collimated beams have exited the interferometer and are focused on a detector array. Further, in Cabib, equation 23 describes the resultant intensity for an OPD. See, Cabib, col. 10, equation 23. Because Cabib describes equations to determine spectral intensity of light, the

equations in the cited portions of Cabib do not describe a computationally induced interference mechanism, as claimed.

Furthermore, the Office Action states that Cabib teaches a signal processor. See, e.g., Office Action, page 6, second paragraph. The Office Action appears to take the position that the signal processor of Cabib is the processor of claim 1. If so, then this position should be reconsidered. The signal processor in Cabib (Cabib, col. 4, lines 34-37, Fig.2) is not for performing active interferometric analysis on a received input signal as claimed. Rather, Cabib describes that the signal processor 37 is for determining the spectral intensity of light. In this regard, Cabib states:

> All the detector signals are sampled and recorded at a high rate, such that all the needed information is collected and fed to the signal processor 37 to reconstruct both the image and the spectra of all the pixels. (Emphasis added).

See, Cabib, col. 6, lines 59-62.

Thus, Cabib describes that the signal processor 37 is to reconstruct both the image and the spectra of all pixels. Cabib does not describe that the signal processor is for performing active interferometric analysis, as claimed.

In addition, the Office Action contends that the mathematical equations described in Cabib (col. 10, lines 16-60) represent the expressor function, as claimed. See, e.g., Office Action, page 7, fourth paragraph. This contention should be reconsidered. As described previously, the equations described in the cited portion of Cabib are for determining the spectral intensity and not for performing active interferometric analysis. Thus, the cited portion of Cabib does not represent an expressor function, as claimed.

Also, the Office Action contends that the features of claim 1 do not exclude the teaching of Cabib because claim 1 recites

"a processor that performs active interferometric analysis." See, e.g., Office Action, page 7, last paragraph. As described previously, Cabib describes mechanically inducing intereference, whereas the claimed subject matter relates to a computationally induced interference mechanism. Furthermore, no portion of Cabib describes or suggests "identifying a signal of interest" as claimed.

At least for the reasons discussed previously, Cabib does not describe all the features of claim 1. Garini does not rectify the deficiencies of Cabib. Garini describes a spectral imaging method for simultaneous detection of multiple fluorophores aimed at detecting and analyzing fluorescent in situ hybridizations employing numerous chromosome paints and/or loci specific probes each labeled with a different fluorophore or a combination of fluorophores for color karyotyping, and at multicolor chromosome banding, wherein each chromosome acquires a specifying banding pattern, which pattern is established using groups of chromosome fragments labeled with various fluorophore or combinations of fluorophores. See, e.g., Garini at Abstract.

With respect to claim 2, the Office Action contends that Garini teaches interferometric analysis using software. See, e.g., Office Action, page 9, fourth paragraph. This contention should be reconsidered. Garini does not describe or suggest active interferometric analysis, as recited in claim 1. The cited portion of Garini describes a spectral bio-imaging system consisting of a measurement system, and an analysis software. The analysis software includes all of the software and mathematical algorithms necessary to analyze and display important results in a meaningful way. See, e.g., Garini, col. 2, lines 23-32. Thus, the cited portion of Garini does not describe or suggest that the analysis software can be used to perform active interferometric analysis. Because the suggested

combination of Cabib and Garini does not describe or suggest performing active interferometric analysis, as claimed, the suggested combination certainly does not describe or suggest performing active interferometric analysis using software, as recited in claim 2.

Thus, claim 1 is allowable at least for the reasons described. Claims 2-10, 12, 13, and 16-18 are also allowable at least for reasons similar to claim 1 and for the additional recitations that they contain. Accordingly, Applicant respectfully requests that the rejections of claims 1-10, 12, 13, and 16-18 be withdrawn. Claims 64 and 65 are new claims that depend from claim 1, and are patentable at least for reasons similar to claim 1 and for the additional recitations that they contain.

CONCLUSION

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Please apply any credits or charges to deposit account 06-1050.

Respectfully submitted,

Date: Feb. 4 '08

Sushil Shrinivasan
Reg. No. L0368

Fish & Richardson P.C.
PTO Customer No. 20985
12390 El Camino Real
San Diego, California 92130
(858) 678-5070 telephone
(858) 678-5099 facsimile

10790558.doc